

CLAIMS

What is claimed is:

1. A method of manipulating XML data in support of data mining, the method comprising:
  - storing the XML data in a network format to a buffer, thereby resulting in a stored network representation of the XML data; and
  - selecting at least one feature of the XML data via a naive selection operating on the stored network representation of the XML data.
2. The method of claim 1 wherein the network format comprises xtalk format.
3. The method of claim 2 wherein the storing comprises:
  - writing the XML data in xtalk format to the buffer, thereby resulting in a stored xtalk representation of the XML data, wherein the xtalk representation comprises xtalk fragments corresponding to fragments of the XML data,
  - wherein one of the xtalk fragments comprises header information of the XML data and
  - wherein each of the remaining xtalk fragments corresponds uniquely with a feature of the XML data.
4. The method of claim 3 wherein the writing comprises:
  - saving each of the xtalk fragments to a corresponding block of the buffer.
5. The method of claim 4 wherein the saving comprises:
  - for each xtalk fragment corresponding to a feature of the XML data, reserving the string length of the feature in the corresponding block of the buffer of the xtalk fragment.
6. The method of claim 4 wherein the selecting comprises:
  - identifying the corresponding block of the buffer that saved the xtalk fragment

that corresponds to the at least one feature of the XML data;

packing the identified corresponding block of the buffer to the front of the buffer via an XML packing process; and

updating the corresponding block of the buffer that saved the xtalk fragment that corresponds to the header information of the XML data.

7. The method of claim 6 wherein the XML packing process comprises at least one call to memmove.

8. The method of claim 6 wherein the updating comprises:  
reflecting a reduction in the number of features stored in the buffer.

9. The method of claim 1 further comprising modifying at least one feature of the XML data via a naive modification operating on the stored network representation of the XML data.

10. The method of claim 8 further comprising modifying at least one feature of the XML data via a naive modification operating on the stored xtalk representation of the XML data.

11. A method of manipulating XML data in support of data mining, the method comprising:  
storing the XML data in a network format to a buffer, thereby resulting in a stored network representation of the XML data; and  
modifying at least one feature of the XML data via a naive modification operating on the stored network representation of the XML data.

12. The method of claim 11 wherein the network format comprises xtalk format.

13. The method of claim 12 wherein the storing comprises:

writing the XML data in xtalk format to the buffer, thereby resulting in a stored xtalk representation of the XML data, wherein the xtalk representation comprises xtalk fragments corresponding to fragments of the XML data,

wherein one of the xtalk fragments comprises header information of the XML data and

wherein each of the remaining xtalk fragments corresponds uniquely with a feature of the XML data.

14. The method of claim 13 wherein the writing comprises:

saving each of the xtalk fragments to a corresponding block of the buffer.

15. The method of claim 14 wherein the saving comprises:

for each xtalk fragment corresponding to a feature of the XML data, reserving the string length of the feature in the corresponding block of the buffer of the xtalk fragment.

16. The method of claim 14 wherein the modifying comprises:

identifying the corresponding block of the buffer that saved the xtalk fragment that corresponds to the at least one feature of the XML data;

packing the identified corresponding block of the buffer to the front of the buffer via an XML packing process;

updating the corresponding block of the buffer that saved the xtalk fragment that corresponds to the header information of the XML data;

storing a new xtalk fragment that corresponds to a new feature of the XML data in a block of unoccupied buffer, thereby resulting in a new block of buffer;

appending the new block of buffer to the buffer; and

revising the corresponding block of the buffer that saved the xtalk fragment that corresponds to the header information of the XML data.

17. The method of claim 16 wherein the XML packing process comprises at least one call to memmove.

18. The method of claim 16 wherein the updating comprises:  
reflecting the number of features stored in the buffer.
19. The method of claim 11 further comprising selecting at least one feature of the XML data via a naive selection operating on the stored network representation of the XML data.
20. The method of claim 18 further comprising selecting at least one feature of the XML data via a naive selection operating on the stored xtalk representation of the XML data.
21. A method of manipulating XML data in support of data mining, wherein the XML data is stored in an XML representation of the XML data, the method comprising:  
selecting at least one feature of the XML data via a naive selection operating on the XML representation of the XML data.
22. The method of claim 21 wherein the selecting comprises:  
performing an in-place selection of the at least one feature.
23. The method of claim 22 wherein the performing comprises:  
scanning the XML representation for the at least one feature; and  
editing a buffer storing the XML representation in place via an XML packing process.
24. The method of claim 22 wherein the performing comprises:  
scanning the XML representation for the at least one feature.
25. The method of claim 22 wherein the performing comprises:  
editing a buffer storing the XML representation in place via an XML packing

process.

26. The method of claim 23 wherein the XML packing process comprises at least one call to memmove.

27. The method of claim 25 wherein the XML packing process comprises at least one call to memmove.

28. The method of claim 21 wherein the XML representation of the XML data comprises a stored database representation of the XML data

29. The method of claim 21 further comprising modifying at least one feature of the XML data via a naive modification operating on the XML representation of the XML data.

30. The method of claim 29 wherein the XML representation of the XML data comprises a stored database representation of the XML data.

31. A method of manipulating XML data in support of data mining, wherein the XML data is stored in an XML representation of the XML data, the method comprising:  
modifying at least one feature of the XML data via a naive modification operating on the XML representation of the XML data.

32. The method of claim 31 wherein the modifying comprises:  
selecting the at least one feature via an in-place selection of the at least one feature;  
removing the selected feature from the XML representation, thereby resulting in a modified XML representation; and  
adding at least one new feature with a new value to the modified XML representation.

33. The method of claim 32 the adding comprises:  
appending the at least one new feature to the modified XML representation.
34. The method of claim 33 wherein the appending comprises:  
parsing backward from the end one close tag of the modified XML representation;  
and  
inserting the at least one new feature to the modified XML representation before  
the end one close tag.
35. The method of claim 31 wherein the XML representation of the XML data  
comprises a stored database representation of the XML data.
36. The method of claim 31 further comprising selecting at least one feature in the  
XML data via a naive selection operating on the XML representation of the XML data.
37. The method of claim 36 wherein the XML representation of the XML data  
comprises a stored database representation of the XML data.
38. A method of manipulating XML data in support of data mining, the method  
comprising:  
storing the XML data in a network format to a buffer, thereby resulting in a stored  
network representation of the XML data.
39. The method of claim 38 wherein the network format comprises xtalk format.
40. The method of claim 39 wherein the storing comprises:  
writing the XML data in xtalk format to the buffer, thereby resulting in a stored  
xtalk representation of the XML data, wherein the xtalk representation comprises xtalk  
fragments corresponding to fragments of the XML data,

wherein one of the xtalk fragments comprises header information of the XML data and

wherein each of the remaining xtalk fragments corresponds uniquely with a feature of the XML data.

41. The method of claim 40 wherein the writing comprises:

saving each of the xtalk fragments to a corresponding block of the buffer.

42. The method of claim 41 wherein the saving comprises:

for each xtalk fragment corresponding to a feature of the XML data, reserving the string length of the feature in the corresponding block of the buffer of the xtalk fragment.

43. A method of manipulating XML data in support of data mining, the method comprising:

storing the XML data in a network format to a buffer, thereby resulting in a stored network representation of the XML data;

selecting at least one feature of the XML data via a naive selection operating on the stored network representation of the XML data; and

modifying at least one feature of the XML data via a naive modification operating on the stored network representation of the XML data.

44. The method of claim 43 wherein the network format comprises xtalk format.

45. A method of manipulating XML data in support of data mining, wherein the XML data is stored in an XML representation of the XML data, the method comprising:

selecting at least one feature in the XML data via a naive selection operating on the XML representation of the XML data; and

modifying at least one feature of the XML data via a naive modification operating on the XML representation of the XML data.

46. The method of claim 45 wherein the selecting comprises:  
performing an in-place selection of the at least one feature.
47. The method of claim 45 wherein the modifying comprises:  
choosing the at least one feature via an in-place selection of the at least one feature;  
removing the selected feature from the XML representation, thereby resulting in a modified XML representation; and  
adding at least one new feature with a new value to the modified XML representation.
48. The method of claim 11 wherein the modifying comprises:  
dropping at least one feature of the XML data. data.
49. The method of claim 11 wherein the modifying comprises:  
adding at least one feature of the XML data. data.
50. The method of claim 11 wherein the modifying comprises:  
dropping at least one feature of the XML data; and  
adding at least one feature of the XML data.
51. A system of manipulating XML data in support of data mining, the system comprising:  
a storing module configured to store the XML data in a network format to a buffer, thereby resulting in a stored network representation of the XML data; and  
a selecting module configured to select at least one feature of the XML data via a naive selection operating on the stored network representation of the XML data.
52. A computer program product usable with a programmable computer having readable program code embodied therein of manipulating XML data in support of data

mining, the computer program product comprising:

computer readable code for storing the XML data in a network format to a buffer, thereby resulting in a stored network representation of the XML data; and

computer readable code for selecting at least one feature of the XML data via a naive selection operating on the stored network representation of the XML data.